Bird 'Flu and Business Continuity

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Threats to Business and Society

1. **Computer-based risks: 6.0**
2. **Foreign trade: 5.3**
3. **Corporate governance: 5.2**
4. **Operational/facility: 5.2**
5. **Liability risk: 5.1**
6. **Regulatory regimes: 5.0**
7. **Consumerism: 5.0**
8. **Natural disasters: 4.7**
9. **Accounting rules: 4.6**
10. **Terror – CBD: 4.4**

Source: *Swiss Re Corporate Risk Survey* 2005: "How concerned are you about various risks affecting your company?" (0–10)

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A Pandemic Occurs When ...

when a novel influenza strain emerges with the following characteristics:

1.   it is readily H2H (infectious between humans),

2.   the human population lacks immunity to the unique strain, and

3.   it is highly virulent.

So far we have 2. and 3. We await H2H.

Each pandemic is unique, but we only have historical data to go on.

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A Pandemic is Due

➢ **On average: three every century. Pandemics in 1890, 1918 (Spanish 'flu), 1957 (Asian 'flu), 1968 (Hong Kong 'flu).**

➢ *Zoonotic diseases:* **(from other species)**

China's populations (in millions):

	1968	2004
Pigs	5.2	508
Chickens	12.3	13,000
People	790	1,300

Source: Cooper & Coxe (2005)

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In the 1918 pandemic:

➢ **In 1918 at least 20 mn people died.**
(McF. Burnett believed up to 200 mn deaths.)
Today's equivalent: between 180 and 360 mn.
AIDS has killed 24 mn, and 40 mn are HIV+
(Barry 2005).

➢ **The case fatality rate in 1918 was 3–5%.**

➢ **In 1918 adults under 40 were disproportionately killed because of auto-immune (cytokine) responses (Cooper & Coxe 2005).**

➢ **Unlike earlier pandemic strains (1918 was H1, 1957 H2, and 1968 H3), the current 'flu virus is A(H5N1) — each pandemic is unique.**

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Economic Costs:

➢ **One year's cost today, perhaps USD$800 billion. (World Bank) (= 2% of world GDP)**

➢ **The SARS outbreak in 2003 estimated to have cost about 0.6% (USD$18 bn) of affected countries' GDPs (Bloom et al. 2005).**

Current Avian 'Flu: A H5N1

➢ **Little evidence of H2H transmission ... yet.**

➢ **Great mortality rate among birds.**

➢ **Now endemic in birds in Eurasia and Africa.**

➢ **Case fatality rate in humans of 59% (of only 258 confirmed cases). (WHO)**

   (SARS: 8096 cases, 774 deaths: c.f.r. 9.6%)

∴ **We should plan for the possibility of an Avian 'Flu Pandemic (AFP).**

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Best Estimates for Australia

— **based on previous 'flu pandemics:**

➢ **Over three waves of infection: 14 mn people clinically infected.**

➢ **Leading to between 1 mn and 1.8 mn extra GP consultations, and**

➢ **between 5,900 and 40,300 extra hospitalisations, and**

➢ **between 1,300 and 7,100 extra deaths.**

See breakdown of age, risk status, and health-care workers in Table 2, below.

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Uncertainties ..

But these estimates, based on CDC estimates, might be underestimates.

There is considerable *epidemiological uncertainty* about how many people will be infected and the severity of the disease, and *economic uncertainty* about how an outbreak will affect economic activity.

Affected by:

➢ **public health measures, private hygiene,**

➢ **the responses of businesses,**

➢ **the responses of people, and the extent to which people panic.**

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Ordinary, seasonal 'flu, in comparison:

➢ **Ordinary influenza infects between roughly 5% and 20% of the population each year.**

➢ **It has a case fatality rate of about 0.1%.**

➢ **It affects the at-risk old and young disproportionately.**

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Business Continuity Planning (BCP)

A central component of the firm's risk management.

Usually, to limit the impact of sudden failure of critical infrastructure from a terrorist act or a natural disaster:

➢ **To maintain critical operations, and**

➢ **To recover critical operations.**

And a BCP is the best way to reduce the impact of an AFP on the firm or organization. (But don't ignore external impacts on suppliers, services, and clients, as some do.)

An AFP: high impact, low probability.

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Attitudes Towards BCP for AFP

A recent Deloitte's survey of 179 U.S. companies, 90 of which have annual revenues greater than US$1 billion:

> **57% believe AFP a real threat to the U.S.; 34% undecided; 9% believe it's not a threat.**

> **But 60% either do not believe that AFP will affect their firm or undecided; 40% believe it will have an adverse impact on their firm.**

> **Moreover, 57% either believe that their firm is not very concerned about AFP or undecided; 43% say their firm is very concerned.**

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Attitudes ...

Only 14% believe their firm is adequately prepared; 66% believe their firm is not adequately prepared.
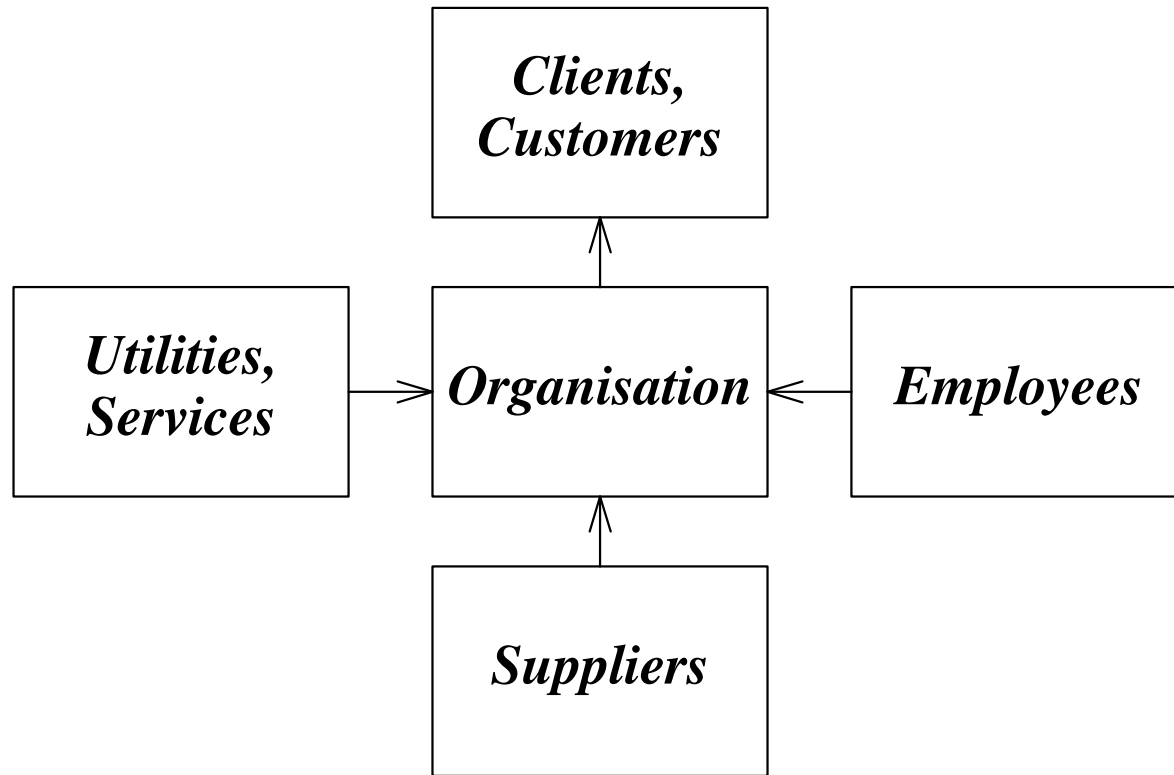
But 39% say that even with BCP, firms could do little to protect themselves; while 41% believe BCP will help protect the firm.

73% would like BCP help for their firm; only 14% say no BCP help needed.

33% say no-one is in charge of their AFP BCP; 29% don't know or didn't respond; 38% say there is a AFP leader (HR, medical, OH&S, etc).

Reasons: AFP hype, ignorance about BCP, firm too decentralised, other business disruptions.

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A Framework for BCP:

```
                    ┌──────────────┐
                    │   Clients,   │
                    │  Customers   │
                    └──────────────┘
                           ▲
                           │
┌──────────────┐    ┌──────────────┐    ┌──────────────┐
│  Utilities,  │ ─► │ Organisation │ ◄─ │  Employees   │
│   Services   │    │              │    │              │
└──────────────┘    └──────────────┘    └──────────────┘
                           ▲
                           │
                    ┌──────────────┐
                    │   Suppliers  │
                    └──────────────┘
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External and Internal Disruption to a Firm or Organisation — Three Vulnerabilities.

1. External Inputs (the supply side):

➢ **Labour: employees, menial, skilled, and managerial.**

➢ **Raw Materials: tangibles.**

➢ **Intermediate Inputs: bought from other firms.**

➢ **Energy/Utilities: electricity, motor fuel, gas, water, sewerage, waste disposal/recycling.**

➢ **Services: banking, auditing, insurance, security, legals, telecoms, travel, maintenance, police, fire, catering, cleaning, consultants, advisors.**

➢ **Capital Markets: equity or debt.**

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Three Vulnerabilities ...

2. External Demands (the demand side): from clients and customers, who buy the firm's outputs.

3. Internal (the third vulnerability): employees, corporate structure (differentiated labour and lines of authority up and down).

Disruption of means to conduct business (e.g. IT), as well as supplies and demand.

An Avian 'Flu Pandemic (AFP) affects not only the externals, but also the internals — geographical spread is no insurance against an AFP.

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Look Within, Not Outside

There are two broad approaches:

1. **Try to plan for all possible threats.**

   But this is endless.

2. **Better to look within the firm/organisation and ask: what do we do, and what do we want to keep doing?**

   How?

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Continuity of Core Activities.

1. **Triage: Rank the organisation's activities as: essential (core); desirable; or postponable. (Bear in mind possible changes to client demands during the event.)**

2. **To what extent will disruptions of Employees and Organisational Functioning, Supplies, and Utilities & Services render continuing activities of the organisation difficult or impossible? (This will depend on the kind of event.)**

3. **Reconsider the rankings in light of these difficulties.**

4. **What actions could the organisation take to mitigate potential disruptions of Employees and Functioning? Suppliers? Utilities? Services?**

5. **Group and rank these actions, and decide which to undertake now.**

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BCP: Six Principles —

1. **Board and Senior Responsibility: Need high-level, comprehensive approach to BCP.**

2. **Major Operations Disruption: To maintain critical levels of operation, BCP must include this risk.**

3. **Recovery Objectives: To obtain rapid and effective recovery capabilities.**

4. **Communication: With stakeholders (including employees and suppliers), credibly: to scotch rumours.**

5. **Testing the BCP: How effective? Unanticipated consequences? Need for revisions?**

6. **Regular BCP Reviews: Who? Which? How? When? A moving target.**

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BCP: 1. Board and Senior Responsibility

For monitoring, planning, managing, documenting, clarifying responsibilities, how to implement.

➢ **H-L senior crisis team — speed & flexibility**

➢ **strategic view of main issues, scenarios**

➢ **target preparedness by division, CBA of investment**

➢ **detailed contingency plans — continuity, legal, HR, comms (inside & outside), OH&S, security; regular reports to HL team on coordination, prioritisation, testing.**

➢ **succession planning (geographic dispersion, to the HL team members)**

➢ **find reliable sources of information**

➢ **market risk analysis: volatility, disruptions**

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BCP: 2. Major Operations Disruption

Ensure critical levels of delivery, sudden temporary failure of infrastructure; identify critical functions, threats to staffing levels.

➢ **identify levels of responses (triggers, steps taken)**
   1. **no H2H**
   2. **H2H proven**
   3. **isolated outbreaks in parent firm's country**
   4. **outbreak affects crucial firm facilities**
   5. **recovery: reintegration, resumption, monitoring, lessons**

➢ **core activities? basic minimum resources?**

➢ **key employees and supplies? scenario analysis and length and timing of disruption**

➢ **understudy teams for critical functions**

➢ **What must be done in the office?**
What could be done at home?

➢ **establish remote and redundant mirroring**
facilities of centralised activities:
   — **avoid public transport**
   — **avoid disruption of remote location**
   — **do remote staff commute? move with families?**
   — **regularly test equipment and procedures of**
      remote facilities

➢ **expand IT and telecomms capacities — budget?**
security? bandwidth? remote access to key
data?

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➢ **For work at home:**
   — **enough staff resources — computer, programs, licences, data, broadband?**
   — **synchronous v. asynchronous work?**
   — **several shifts?**
   — **supervising remote computing — quality and risk control? backups?**

➢ **stockpiling key supplies**

➢ **disruptions to key service providers?**

➢ **electronic payments from customers? to employees? to suppliers?**

➢ **notifying customers and suppliers of any changes?**

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BCP: 3. Recovery Objectives

➢ **identify minimum critical activities and necessary staff level**

➢ **identify activities feasible remotely**

➢ **establish "dark" remote facilities?**

➢ **coordination with joint producers, joint venturers, complement producers.**

BCP: 4. Communication

➢ **with staff — prevent panic, strengthen morale, ensure health protected and critical functions continue**

➢ **start now, beforehand, to establish credibility**

➢ **details of mobiles (texting), sat phones, landlines, emailing — of staff, suppliers, key customers**

➢ **establish hotlines and websites**

➢ **inform staff about the BCP, triggers, monitoring preparations**

➢ **how do others get information?**

➢ **how do key suppliers plan to respond?**

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➢ **educate staff:**
- — **hygiene: washing, coughing, greeting, touching**
- — **special care for high-risk employees**
- — **symptoms of AF v. other 'flus**
- — **liberal leave policies**

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BCP: 5. Testing the BCP

Important, but challenging.

➢ **first, test specific tools, not scenarios — technology & infrastructure**

➢ **then "desk-top" tests with scenarios — debrief**

➢ **test remote facilities — computing, communications**

➢ **seek surprises, weaknesses in BCP**

➢ **remote sites and staff dispersion — costly**

➢ **which scenarios to test for? low incidence easier but high incidence different in kind.**

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BCP: 6. Regular BCP Reviews

➢ **as weaknesses emerge from testing**

➢ **as new ideas occur**

➢ **with internal organisational changes**

➢ **as available resources (internal and external) change**

➢ **as (knowledge of) external threats and circumstances changes**

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Facilities

➢ **supply shortages**

  — **stockpiling, reliability of JIT methods?**

➢ **maintenance**

  — **more frequent cleaning, internal maintenance**

➢ **quarantining**

  — **reduce face-to-face interactions**
  — **policies on quarantining of returnees? of those who fall ill at work?**
  — **disinfectants and hygiene**

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Profits for Disaster?

These industries will sell more:

➢ **Medical masks, wipes, and hand-washing liquids.**

➢ **Long-lived foods, for storing.**

➢ **Off-grid energy supplies.**

➢ **Ionisation to destroy air-borne pathogens.**

➢ **Biotech: fast detection; vaccine prototyping and manufacture.**

➢ **Undertakers etc.**

➢ **Health providers.**

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Investment Advice?

These industries will suffer:

➢ *Tourism and hospitality* **industries hard hit.** *Travel* **too.**

➢ *Mass entertainment* **(cinemas, theatres, concerts, museum, galleries, sports) hit.**

➢ *Retailing, leisure, casinos, racing, theme parks* **hit.**

➢ *Life and re-insurance* **companies hit.**

➢ *Property and housing and mortgage providers'* **values fall.**

➢ *Poultry industries* **hit, with its suppliers.**

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Opportunities?

Other Beneficiaries:

➢ **Telecoms, telecommuting industries.**

➢ **Broadband suppliers.**

➢ **Their equipment suppliers.**

➢ **Pharmas such as Biota/GSK and Gilead/Roche (the antivirals Relenza and Tamiflu, respectively).**

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How to Prepare Your Business

Be prepared:

➢ **Need *BCP* for a pandemic (or other contingencies).**

➢ ***Quit danger zones.* Get employees out of at-risk countries, while covering necessary jobs.**

➢ ***Limit employees' travel.* Airports will be incubators.**

➢ ***Focus on core activities:* are they sustainable over several months?**

➢ ***Identify core functions and employees,* plan redundancy for 25% to 40% of staff sick.**

➢ ***Stock up,* lest supply lines are disrupted.**

➢ ***Go it alone.* Sewerage, water, electricity, other utilities may be interrupted.**

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Further:

➢ *Limit infection in the workplace.* **Air circulation and filtration; masks; staggered work hours to limit size of gatherings.**

➢ *Telecommute.* **Work from home, where possible — has IT requirements.**

➢ *Vaccinate employees.* **But unlikely to be 100% effective.**

➢ *Sick leave policy?* **Don't discourage employees from staying home when sick. Sick pay helps.**

➢ *On-line and self-service options* **for clients, customers, and partners.**

➢ *Communicate.* **Lack of information can lead to panic as people fear the worst.**

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For Individuals ...

➢ **Avoid contact with sick people.
Indeed, avoid touching anyone else.
Or even door-knobs, taps, lift buttons, etc.**

➢ **Clean your hands, often.**

➢ **Don't touch your eyes, nose, or mouth.**

➢ **Good health habits: sleep, exercise, good foods, no smoking.**

➢ **Stay at home with disease or symptoms. Rest, and take medical advice.**

➢ **If sick, avoid dehydration: keep the fluids up.**

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Discussion

"**The *gross attack rate* (infection rate) expresses the percentage of the population that is likely to become clinically ill. The potential range is quite high. Typically influenza pandemics have a gross attack rate of 20–40% (Taubenberger 2005). The percentage of the infected that succumbs to influenza is the *case fatality rate*. The *mortality rate* is determined by multiplying the gross attack rate with the case fatality rate. In the case of Spanish 'flu, it is estimated that the total mortality rate was between 2.5–5% of the world population (Barry 2005). But the 1957 outbreak had a mortality rate of 0.024% in the United States. Typically the very young and the old are at the greatest risk of mortality, but each 'flu outbreak is different and it is not possible to predict what groups will be most vulnerable (Simonsen et al. 2005)."**

"It is also difficult to predict how the public will respond to a 'flu outbreak. Historical experience shows that even during an epidemic outbreak, the public soon adapts to the disease and economic activity continues. On the demand side, a pandemic is likely to affect consumer confidence and change consumption and social patterns. It will also affect investor confidence, which can have important long-term consequences. On the supply side, a pandemic will affect the availability of labor, as illness will force many workers to stay home. It will also continue to affect the livestock sector negatively. Governments will have to deal with an uncertain policy environment as they respond to the public health emergency and economic dislocation. Markets have a tendency to over-react, which could exacerbate the economic impact."

Bloom et al. 2005

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Table 1: Distributions of Disease Outcomes

Variables used to define distributions of disease outcomes of those with clinical cases of influenza. Rates per 1,000 persons.

Variable	Lower	Most Likely	Upper	Variable	Lower	Most Likely	Upper
Outpatient/GP visits—				*Hospitalizations—*			
Not at high risk:				**Not at high risk:**			
0–19 yrs old	165	.	230	0–19 yrs old	0.2	0.5	2.9
20–64 yrs old	40	.	85	20–64 yrs old	0.18	.	2.75
65+ yrs old	45	.	74	65+ yrs old	1.5	.	3.0
High risk:				**High risk:**			
0–19 yrs old	289	.	403	0–19 yrs old	2.1	2.9	9.0
20–64 yrs old	70	.	149	20–64 yrs old	0.83	.	5.14
65+ yrs old	79	.	130	65+ yrs old	4.0	.	13
Deaths—							
Not at high risk:							
0–19 yrs old	0.014	0.024	0.125				
20–64 yrs old	0.025	0.037	0.09				
65+ yrs old	0.28	0.42	0.54				
High risk:							
0–19 yrs old	0.126	0.22	7.65				
20–64 yrs old	0.1	.	5.72				
66+ yrs old	2.76	.	5.63				

Source: Meltzer et al. 1999.
Clinical cases are defined as cases in persons with illness sufficient to cause an economic impact. The number of persons who will be ill but will not seek medical care are calculated as follows: Number ill(age) = (Population(age) × gross attack rate) – (deaths(age) + hospitalizations(age) + outpatients(age)). The number of deaths, hospitalizations, and outpatients are calculated below by using the rates presented in this table.
Note: there is a very high degree of uncertainty associated with the rates in Table 1.

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Table 2: Australian Health Outcomes

| Group | Size | Percentage | Clinical illness | One or more GP visits | |
| | | | | Lower | Upper |
	(mn)	(%)	(mn)	(th)	(th)
Children 0–14	3.92	19.5	3.68	607.248	846.466
Healthy Adults 15–65	11.75	58.4	8.43	337.28	716.73
High-Risk Adults 15–65	1.06	5.3	0.68	47.87	101.90
Health-Care Workers	0.74	3.7	0.53	40.53	45.13
Elderly 66+	1.79	8.9	0.61	27.35	44.98
High-Risk Elderly 66+	0.84	4.2	0.28	22.49	37.02
Total	20.11	100.0	14.22	1082.78	1792.23

| Group | Size | Hospitalisation | | Death | |
| | | Lower | Upper | Lower | Upper |
	(mn)	(th)	(th)	(th)	(th)
Children 0–14	3.92	0.736	6.580	0.052	0.460
Healthy Adults 15–65	11.75	1.518	23.188	0.211	0.759
High-Risk Adults 15–65	1.06	1.514	3.515	0.068	3.912
Health-Care Workers	0.74	0.096	1.460	0.013	0.048
Elderly 66+	1.79	0.912	1.823	0.170	0.328
High-Risk Elderly 66+	0.84	1.139	3.702	0.786	1.603
Total	20.11	5.914	40.270	1.300	7.110

These figures are derived by multiplying the population in each group by the rates per 1,000 given in Table 1.
The ratios of at-risk (to respiratory complications) people to healthy people is taken from Swiss data (Piercy & Miles 2003).

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